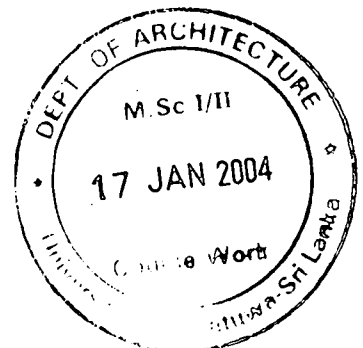


**THE STREETScape DESIGN :****AN EXAMINATION OF THE RELATIONSHIP BETWEEN THE  
ARCHITECTURAL COMPOSITION OF STREETScape AND LEGIBILITY  
OF URBAN SPACE****A Dissertation****Submitted to the Department of Architecture of the  
University of Moratuwa in partial fulfillment of the****Requirements for the degree of  
Master of Science****In****Architecture****LIBRARY  
UNIVERSITY OF MORATUWA, SRI LANKA  
MORATUWA****by****T.D.G.K de Alwis****17 / 01 / 2004****85440****University of Moratuwa**72"04"  
72(043)

85440

85440

## DECLARATION

I declare that this dissertation represents my own work, except where due acknowledgement is made, and that it has not been previously included in a thesis, dissertation or report submitted to this University or to any other institution for a degree, diploma or other qualification.

Signed : De Alwis T. D. G. K.

(Name of the student: De Alwis T. D. G. K.)



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## **The Streetscape Design :**

### **Examination of the Relationship Between the Architectural Composition of Streetscape and Legibility of Urban Space**

#### **CONTENTS**

<b>Title</b>	<b>Pg.No</b>
LIST OF ILLUSTRATIONS	v
ABSTRACT	xii
ACKNOWLEDGEMENTS	xiii
<b>INTRODUCTION</b>	
0.1 The Study	xiv
0.2 Importance of the Study	xv
0.3 Intention of Study	xvii
0.4 Scope and Limitations	xvii
0.5 Methodology	xviii
<b>CHAPTER ONE – <u>Identification - Architectural Composition of the Streetscape.</u></b>	
1.1 <b>Constituents of Architectural Composition of Streetscape</b>	01
1.1.1 Streetscape as a Work of Architecture	01
1.1.2 The Principles of Architectural Composition in an Urban Streetscape	02
1.1.2.1 Unity	02
1.1.2.2 Elements of Contrast	07

1.2 The Determinant Factors of a Streetscape.	15
1.2.1 A Streetscape Determined by the Usage.	15
1.2.1.1 A Cultural Usage	15
1.2.1.2 A Residential Usage	16
1.2.1.3 Commercial Usage	17
1.2.1.4 An Executive Usage	18
1.2.1.5 An Institutional Usage	18
1.2.2 A Streetscape determined by the Context	19
1.2.2.1 Physical Setting and the Features of the Context	19
a)Topography	19
b)Views	19
c)Vegetation	20
d)Climate	20
1.3 The Expressive Quality According to the Determinant Factors	20
1.3.1 The Dominant Character	21
1.3.2 The Dynamic Character	21
1.3.3 The Sophisticated Character	21
1.3.4 The Grand Character	21
1.3.5 The Calm Character	22
1.3.6 The Festive Character	22
1.4 Concluding Remarks	22

## **CHAPTER TWO – Responsiveness of Urban Space**

2.1 Definition of Urban Space	23
-------------------------------	----

2.1.1 Architectural Space	23
2.1.2 Space	24
2.1.2.1 Center	24
2.1.2.2 Enclosure	24
2.1.2.3 Depth	25
2.1.2.4 Density	27
2.1.2.5 Continuity	29
2.2 Responsiveness	30
2.2.1 Permeability	31
2.2.2 Variety	32
2.2.3 Legibility	32
2.2.4 Robustness	32
2.2.5 Visual Appropriateness	33
2.2.6 Richness	33
2.2.7 Personalization	33
2.3 Legibility as the Key Factor of Responsiveness	33
2.4 Concluding Remarks	37

### **CHAPTER THREE – Towards a Framework for a Legible Urban Streetscape**

3.1 Basis for selection of case studies	38
3.2 Considering the Activity Pattern of the Streetscape	40
3.2.1 Galle Road at Kollupitita	41
3.2.2 Galle Face Central Road – Colombo 3	45
3.2.3 York Street	49

3.2.4 Cross Streets, Pettah	53
3.3 Considering the Physical Layout of the Streetscape	57
3.3.1 Galle Road at Kollupitiya	58
3.3.2 Galle Face Central Road – Colombo3	61
3.3.3 York Street	65
3.3.4 Cross Streets, Pettah	70
Conclusion	74
Bibliography	76



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## List of Illustrations

	Pg.No
Fig.1 Unity achieved by resolved duality.	03
Fig.2 The Selimiye Mosque at Edirne (formerly Adrianople). Unity can be one single unit or one visible unit.	03
Fig. 3 Illustrates the destruction of unity by competing duality.	04
Fig.4 Unresolved duality.	04
Fig. 5 and 6 Effect of duality lessened where shapes are less strongly marked.	05
Fig. 7 and 8 Duality lessened by differences of tone and texture.	05
Fig.9 Duality lessened by colour and tone. Given below shows two equal buildings which has a balance and have a center of interest producing unity in composition.	05
Fig.10 Unity in symmetrical composition	06
Fig.11 Achieving unity by correct proportions and interest of focal point.	06
Fig.12 Resolved duality by introducing trinity.	07
Fig. 13 Church of the Miracoli, Venice.	08
Fig. 14 Contrast in elementary form, the dome.	08
Fig.15 The Chiesa del santo, Padua. Contrast in proportion between forms of the same type and general contrast of geometrical shapes	09

Fig.16	
Contrast in proportions of same forms.	09
Fig. 17	
Contrast of line in the contour of form exemplified in a candelabrum.	10
Fig. 18	
The main line of elevation of building is horizontal.	11
Fig.19	
Contrast in colour.	11
Fig. 20	
Contrast in texture.	
Fig.21	
Solids clearly dominating overvoids.	13
Fig.22	
Church in Stolkholm, Contrast in shapes both in the main mass and in the form of the tower, dominating verticality.	14
Fig.23	
Contrast in shapes both in the main mass and in the form of tower.	14
Fig.24	
Streetscape with cultural use – Dalada Veediya, Kandy.	16
Fig.25	
Streetscapes with Residential Use.	16
Fig.26	
Streetscapes with Commercial Use.	17
Fig.27	
Streetscape with Executive Use – Raj Rath, India	18
Fig.28	
Streetscape with Institutional Use.	18
Fig.29	
From implicit to explicit space	23



Fig.30	
The effect of depth	25
Fig.31	
Attempt spatial decomposition of a painting by Le Corbusier	26
Fig.32	
Perspective and texture - as gradients of depth.	27
Fig.33	
Dense space Interior of the Mosque at Cordoba	27
Fig.34	
Absence of density, Universal space, Deep and empty	28
Fig.35	
The modulation of the floor and walls increases the density of space by subdividing its depth.	28
Fig.36	
Continuity of the ground and the wall creates tension between the observer's viewpoint, the end of the terrace and the framed landscape in the distance.	29
Fig.37	
The opening of a space is obtained by the reduction of its degree of definition	29
Fig 38	
To exist man too has to continue and make relationship with space	30
Fig.39	
Fundamental Layout Implications of Permeability	31
Fig.40	
The biggest open spaces were related to the most important public facilities	34

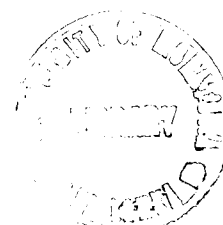



Fig.41	
The buildings which stood out from the rest were those of greatest public relevance.	35
Fig.42	
Where privacy and security permitted, many buildings allowed the passer-by to see the activities inside.	35
Fig.43	
Philadelphia, USA.	
Achieving Greater Legibility	36
Fig. 44	
Key to Maps	38
Fig 45	
Layout Plan Kollupitiya	41
Fig.46	
Pizza Hut - By the side of the Galle Road	42
Fig.47	
The Bus Halts are also Associated with Some Other Prominent Place and Have Become Part and Parcel of a Specific Place.	43
Fig.48	
People Rush to the Bus-Halt after the Office	43
Fig.49	
Galle Road at Kollupitiya, in the Festive Season.	44
Fig.50	
Lay-out Plan- Slave Island	45
Fig.51	
Vast Boundless Space with a Dynamic Sensation	46
Fig.52	
In the Evening, It creates a Festive Quality with different kind of users.	47
Fig.53	
The Line of trees provide Shade for the Users	47

Fig.54		
Lay out Plan – Fort		49
Fig.55		
York street, Colombo, at the beginning of the Century.		50
Fig.56		
Vehicles are parked blocking the Pedestrian's way.		51
Fig.57		
Arcades are created from the building itself to avoid Congestion.		51
Fig.58		
Security Barriers Blocking the Way		52
Fig.59		
Layout Plan - Pettah.		53
Fig.60		
Pettah in the late 19 <sup>th</sup> Century		54
Fig.61		
Towards Cross Streets from Olcott Mawatha		54
Fig.62		
The cross streets are known as a center for buying and selling goods and for whole sale goods for venders who come from outstation and wide range of consumer goods to customers.		55
Fig.63		
The streets are choked by vehicles and people with various activities.		56
Fig.64		
Low scaled, Closely packed Shops along the Street.		56
Fig.65		
Low scaled Commercial activities happening in the Day time.		57
Fig.66		
The Patterns of the Places.		58
Fig.67		
The Built Pattern of Galle Road towards Kollupitiya		58

Fig.68	
The Landmark tower is indeed actually a Landmark for Kollupitiya.	59
Fig.69	
A Stretch of Buildings in a Larger Scale.	60
Fig.70	
Map of the Area	61
Fig.71	
Framed view of Fort from Kollupitiya.	62
Fig.72	
Galle Road corridor opens out to the Spacious Galle Face Green.	62
Fig.73	
Galle Face Court and Galle face hotel give correct punctuation and enclosure to the transition.	62
Fig.74	
The Massive Esplanade and Panoramic View of the Sea gives a Festive Character to the Street.	63
Fig.75	
The Old Parliament Building gives a Dominant Quality.	63
Fig.76	
Hotel Taj-Samudra – Stands up with its Grandness.	64
Fig.77	
Galle Face Hotel- High Recreational use.	64
Fig.78	
Map of Area	65
Fig.79	
View of York Street from Southern End	66
Fig.80	
The York Street towards the end with the View of Ports Authority Building.	66
Fig.81	
York Street as a Good Path.	67

Fig.82	
The Colonial Building Facades of the West Elevation	67
Fig.83	
Stands with the Monotonous Building Façade	68
Fig.84	
Section A – A ( First Segment of York Street )	
The trees of Eastern Side of the Street, contribute to provide the enclosure.	69
Fig.85	
Section B – B ( First Segment of York Street)	
High-rise building on Echelon Square on Southern side Contribute to provide enclosure.	69
Fig.86	
The Map of Area	70
Fig.87	
The statue at Col. Henry Olcott, is a meaning full landmark to Pettah, which is located in front of the Colombo Fort Railway Station.	71
Fig.88	
The Dutch Museum with the colonnaded front.	72
Fig.89	
The Mosque at Upper  Second Cross Street.	72
Fig.90	
Narrowness and Enclosure bring a feeling of intimacy.	72
Fig.91	
A section across a cross streets showings the relationship between height of the buildings and width of the street.	73

## **Abstract**

Architecture is not mere enclosure and shelter. It is neither the details nor materials and technology used. It is primarily a spatial experience. It is experiencing of space, which gives such a quality to a particular created space; in this study it is the urban streetscape. It needs to achieve, protect and enhance quality of space. The built environment has a profound influence on man and his behavior, in terms of modifying the physical world to accommodate his physical, psychological and social needs. Man is an emotional as well as an intelligent being. Therefore he is affected psychologically by the sociocultural and physical context as much as he is affected in terms of physical comfort. Thus, particular environment has a definite and definable influence on man and his behavior.

This has resulted in the evolution of different types of Architectural products such as; houses, churches, markets, offices and specially the urban streetscapes. The quality of the environment within such space has to encourage and propagate the activity within, in order to be success. This has been a major responsibility of Architecture through the ages.



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

Urban spaces are always closely associated with functions. These spaces can be formal or informal and be large or small depending on their scale. Formal urban spaces usually have regular arrangements with strong, supporting elements and a strong sense of enclosure.

Every city consists of urban spaces, in the form of street space. The buildings should be designed with a correct understanding of the character of existing urban spaces and a clean conception of how to create meaningful 'places' with in a given context. At this point the principles of Architectural composition and legibility in an urban streetscape becomes more important.

## **Acknowledgements**

I take this opportunity to convey my deepest gratitude to all whom helped me in preparation of this dissertation.

- Prof. Nimal de Silva Dean, Department of Architecture, for the encouragement and initial guidance.
- Archt. Vidura Sri Nammuni, Head, Dept. of Architecture, for the inspiring discussions, advice and comments, the constant encouragement from the onset till the end and above all for believing in its worth.
- Archt. Prasanna Kulathilake, Senior Lecturer, Dept. of Architecture for countless discussions, criticism, comments and guidance .
- Dr. Harsha Munasinghe, Senior Lecturer, Dept. of Architecture for his kind supervise when ever needed.
- Mr. Alahakoon for spending his valuable time uncomplainingly, helping with the photographic work.
- For the police officers, who kindly listened to me and for 'curious pedestrians', who were alert, who poke their nose in to what I was doing and their valuable contribution.
- It is to them that I humbly pay tribute; to Nilantha aiya and Yasho akka for kind guidance and numerous help in the whole process.
- Dushshantha who helped me in many ways.
- My dear parents and akka for their blessings and sharing my tears and most of all accepting me as I am.
- And to my dearest Madhawa for his love, strength and courage for me for my success.





University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)

## INTRODUCTION



## Introduction

### 0.1 The Study –

Examining the theories and opinions concerning streetscapes, various misconceptions can be observed. The Traffic Engineer views the street as a vehicular locomotion and traffic space, while the town planner views it in terms of economic and general infrastructure allocation. These contradicting and controversial opinions have resulted in turning streetscapes into spaces, which only make provisions for vehicular movement, thus eliminating the qualities of public space, which facilitate certain human behavioral patterns.

Streetscapes in urban context are such places where the creation, preservation and maintenance of strong characters have become a crucial need, because the urban environments have become disordered and meaningless places due to many adhoc developments that has taken place.

The space become rather a manifestation of non – physical, qualitative attributes than what is generally considered as a physically and visually experienced component. One such qualitative attribute is 'spirit' which brings beyond – utilitarian meaning to urban spaces. Which uplift the emotions of the user.

The elements which demarcate the space of the street and which accentuate the movement along the street can be called streetscape. A streetscape is therefore experienced as a series of three-dimensional space segments, with the street elevations acting as vertical planes on sides, the street itself as the ground and the sky, as a perceptual ceiling, acting as horizontal planes. In fact this streetscape is the one that people experience and one that should bear a unique spatial quality.

In this connection what is most essential is the identification of the urban streetscape in an Architectural point of view and identify the principles of Architectural composition. The determinant factors of urban streetscape

characters such as; usage, context, symbols and meanings give a particular expressive quality to the streetscape. A responsive place, should provide its users with an essentially democratic/setting. The design of the streetscape, effects the choices people can make at many levels. Those are permeability, verity, robustness, visual appropriateness, richness and personalization. Out of these levels, this study is mainly focused on the legibility of an urban streetscape.

## 0.2 The Importance of the Study –

Space in Architecture can generally be categorized into two. That is interior and exterior enclosed space. In an interior space there is the complete sense of enclosure.

The sense of enclosure felt in an external enclosed space, differ from an interior space. Most of the people think that exterior enclosed space cannot be an Architectural space, since space is enclosed here by external masses. There is a general consensus among Architectural critics that any perceptible space is an Architectural space. Hence it could be noted that Architectural space exists not only in an interior space but also in any given enclosed space. The demarcated space defined by its arranging masses is referred to as Physical space.

Architectural space appear to give different kinds of emotional reactions. Some may have kinds of intimation given by its ornaments and decorations, color and textural patterns and interplay of light and shadow. Thus Architectural space is always enriched by a multitude of expressions.

Marcel Proust (1970, p : 288) ;

expresses with nostalgia, the insignificance of place for modern man,

"No more is there a sense of continuity with place." What do we mean then when we say "loss of place" . Primarily loss of place means a loss of identity of a space. This results in a monotonous experience of "sameness", where every space not only looks alike.

The urban streetscape can be experienced as an Architectural space (building) consisting of streets (corridors) flanked by buildings on either side (rooms), entry spaces that overlap with street intersections (lobbies), foci (major spaces) and points of termination (ends of buildings).

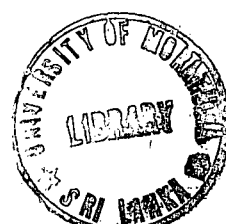
The street becomes a main artery like a main corridor in a building. Buildings in street fabric are joined to each other with streets, lanes, squares etc. Similar to a building where spaces join to each other with corridors, passages and lobbies.

Urban street is a built space perceived as a three dimensional canyon, an elongated duct formed by buildings and the ground. Since the urban street is a channel it has the perspective distortion. The vertical planes of buildings are significant in the articulation of the exterior space in an urban street. These will give the impression where to go and what to do.

Now it is becoming no longer the public urban space between buildings which we used to have until recent past. This results in progressive movement at this "public urban space" into the interior of the structures of solids on both sides. No longer it will take time to be considered the street as a secondary component with our urban structure. Hence today streets are becoming less an integral part of our urban lives. Therefore Architect's duty is to create more legible urban streetscapes which facilitate the user. And this particular study will help in achieving this target.

In an urban street with lesser avenues, crossings would lessen the directionality and the sense of enclosure. Different plan configuration or the building line within a given enclosed urban street space leads to create different degree of enclosure. A view of an enclosed street space is terminated with a building at a right angle to the axis of the enclosure where the enclosed space assumes a complete sense of enclosure. Here the degree and the nature of the enclosure varies with the height and the angle of the terminating building.

Similarly when the street is curving the view out is closed and a perceptible enclosure affected. Like windows in a room, avenues along a highly enclosed street provides views out and visual shock.



### **0.3 The Intention of the Study –**

This study intends to demonstrate the Architectural principles of a well composed urban streetscape. Then it has achieved some expressive qualities through the determinant factors; like usage and context.

Then it is to be considered the related urban space and the importance of the legibility of a streetscape. Therefore this particular study is towards a framework for a legible urban streetscape. The study intends to examine the relationship between the Architectural composition of streetscape and legibility of urban space.

### **0.4 The Scope and Limitations –**

The Architectural language which creates the streetscapes and their characters can be numerous and demands a separate study of its own, which outside the intention and the scope of the present study.

Therefore it is generally discussed and illustrated with lesser emphasis., and the discussion has been limited to some selected examples as necessitated by the scope of the study.

In this framework of study the main principles of Architectural Composition in an Urban Streetscape; that is unity and element of contrast are taken in to account. As well as the determinant factors of a streetscape which are also limited into two, the usage and the context. Then the expressive qualities according to the determinant factors also limited to a few main characters.

Considering the responsiveness of urban space, the main focus is to the legibility. The responsiveness is mainly towards a legible urban streetscape. Finally when considering a well-composed, legible urban streetscape; the emphasis is on the socio- cultural factor and the physical factor of a streetscape.

## **0.5 Method of Study –**

The relationship between the Architectural composition of the streetscape and the legibility of urban space is analyzed and identified through a theoretical approach. First the principles of Architectural composition of the urban streetscape and the streetscape characters are identified. Secondly the responsiveness of urban space and the main constituents of urban space are identified. Finally this established relationship is studied with a theoretical framework by selected actual examples.

Therefore the methodology is three fold;

That is;

- 1) To identify the urban streetscape.
- 2) Then the responsiveness of urban space, considering the constituents of urban space.
- 3) Thirdly to examine the relationship between Architecturally well composed urban streetscape and the legibility of the related urban space.



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
[www.lib.mrt.ac.lk](http://www.lib.mrt.ac.lk)